a selection circuit which, in order to select, among events wherein the radiation is detected, a specific event wherein radiation derived from a radio-isotope injected into a subject is detected, in a first case wherein only one of said semiconductor cells in the semiconductor cell array outputs a signal, compares an energy of the signal with a predetermined energy window, and in a second case, wherein not less than two semiconductor cells in the semiconductor cell array output not less than two respective signals substantially simultaneously, calculates a total energy of the not less than two signals and compares the total energy with the predetermined energy window;

a position calculation circuit which, in the first case, calculates an incidence position of the radiation based on a position of said semiconductor cell that output the signal and, in the second case, calculates an incidence position of the radiation based on a position of only one of said not less than two semiconductor cells;

a counting circuit configured to count the specific event in association with the calculated incidence position; and

a circuit configured to generate a distribution of radio-isotope in the subject on the basis of a counting result.

2. (Amended) An apparatus according to claim 1, further comprising an internal coincidence circuit configured to determine the second case on the basis of a time difference among a plurality of signals output from said at least one radiation detector.

3. (Amended) An apparatus according to claim 1, wherein, in the second case, said position calculation circuit compares the energies of the not less than two signals in order to select only one of said not less than two semiconductor cells.

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4. (Amended) An apparatus according to claim 1, wherein, in the second case, said position calculation circuit selects, from said not less than two semiconductor cells, one semiconductor cell that outputs a signal representing a minimum energy.

5. (Amended) An apparatus according to claim 1, wherein, in the second case, said position calculation circuit selects only one of said not less than two semiconductor cells on the basis of the energy of the not less than two signals.

6. (Amended) An apparatus according to claim 1, wherein, in the second case, said position calculation circuit selects, from said not less than two semiconductor cells, one semiconductor cell that outputs a signal representing a minimum energy in a first area, and one semiconductor cell that outputs a signal representing a maximum energy in a second area.

7. (Amended) An apparatus according to claim 1, wherein, in the second case, said position calculation circuit selects one semiconductor cell from said not less than two semiconductor cells on the basis of an energy of the not less than two signals and the positions of said not less than two semiconductor cells.

8. (Amended) An apparatus according to claim 1, further comprising a circuit configured to calculate time differences between a signal output from one of said plurality of semiconductor cells and signals output from remaining cells of said plurality of semiconductor cells.

9. (Amended) An apparatus according to claim 1, further comprising a circuit configured to calculate time differences between a signal output from one of said plurality of semiconductor cells and signals output from remaining cells of said plurality of semiconductor cells, and determines the second case on the basis of the time differences.

12. (Amended) A nuclear medical diagnostic apparatus comprising:

at least one radiation detector, each radiation detector including a semiconductor cell array having a plurality of semiconductor cells that (1) are arranged in a matrix, (2) detect radiation separately, and (3) output signals representing an energy of the radiation separately;

a selection circuit that (1) causes, among events wherein the radiation is detected, an event wherein not less than two semiconductor cells in the semiconductor cell array output not less than two respective signals substantially simultaneously, not to contribute to imaging, and (2) selects an event derived from a radio-isotope injected into a subject based on an energy of a corresponding signal,

a position calculation circuit configured to calculate an incidence position of the radiation based on positions of said semiconductor cells that output signals;

a counting circuit configured to count the selected event in association with the calculated incidence position; and

a circuit configured to generate a distribution of radio-isotope in the subject based on a counting result.

14. (Amended) A nuclear medical diagnostic apparatus comprising:

at least one radiation detector, each radiation detector including a semiconductor cell array having a plurality of semiconductor cells that (1) are arranged in a matrix, (2) detect

radiation separately, and (3) output signals representing an energy of the radiation separately;

a position calculation circuit which, in a first case, wherein only one of said semiconductor cells in the semiconductor cell array outputs a signal, calculates an incidence position of the radiation based on a position of said semiconductor cell that outputs the signal and, in a second case, wherein not less than two semiconductor cells in the semiconductor cell array output not less than two respective signals substantially simultaneously, calculates an incidence position of the radiation based on positions of said not less than two semiconductor cells that output the not less than two signals substantially simultaneously;

a counting circuit configured to count an event wherein radiation derived from a radio-isotope injected into a subject is detected, in association with the calculated incidence position; and

a circuit configured to generate a distribution of the radio-isotope in the subject based on a counting result.

15. (Amended) An apparatus according to claim 14, further comprising an internal coincidence circuit configured to determine the second case based on a time difference among the plurality of signals output from said at least one radiation detector.

17. (Amended) An apparatus according to claim 14, wherein, in the second case, said position calculation circuit calculates, when said two semiconductor cells output signals substantially simultaneously, an incidence position on the basis of one of the positions of said two semiconductor cells, and when not less than three semiconductor cells output signals substantially simultaneously, a barycentric position of the positions of remaining cells of said plurality of semiconductor cells obtained by excluding said semiconductor cell that has output

the signal having a maximum energy.

22. (Amended) A method for generating a distribution of a radio-isotope in a subject with a nuclear medical diagnostic apparatus including at least one radiation detector, each radiation detector including a semiconductor cell array having a plurality of semiconductor cells arranged in a matrix, comprising:

detecting a radiation derived from the radio-isotope with a semiconductor cell that outputs a signal;

comparing an energy of the signal with a predetermined energy window in a first case wherein only one of the semiconductor cells in the semiconductor cell array outputs a signal;

comparing, in a second case wherein not less than two semiconductor cells in the semiconductor cell array output signals, a total energy of the signals with a predetermined energy window; and

calculating an incident position of the radiation based on a position of the semiconductor cell outputting the signal in the first case and based on a position of only one of the semiconductor cells outputting signals in the second case.

REMARKS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-17 and 22 are presently active. Claims 1-9, 12, 14, 15, 17, and 22 have been amended; and Claims 18-21 have been cancelled without prejudice by the present amendment. The changes to the claims are supported by the originally filed specification and do not add new matter.